

6

**REMARKS**

Applicants have carefully reviewed the Office Action dated October 6, 2003. Applicants have amended Claims 3 and 12 to more clearly point out the present inventive concept. Reconsideration and favorable action is respectfully requested.

Claims 3-20 stand rejected under 35 U.S.C. § 102(e) as being anticipated by *Stroyan*, U. S. Patent No. 6,429,877. This rejection is respectfully traversed with respect to the amended claims.

Applicants note with appreciation the Examiner's detailed analysis of the Applicants previous response.

Applicants believe that a detailed discussion of *Stroyan* would be helpful in view of showing distinguishing features between Applicants's invention and the *Stroyan* reference. The *Stroyan* reference discloses a system wherein a first polygon is rendered and, during the rendering operation, edge pixels are detected and then a determination made as to the percentage of the pixel that is within the polygon for the purpose of antialiasing. The purpose of this is to apply an antialiasing filter at a later time, if necessary, to blend the edge pixel such that the color thereof is a combination of the color of the polygon which the pixel is an edge pixel and the color of the background. For example, if the edge pixel laid on the edge of the polygon with 50% inside the polygon and 50% outside the polygon, then a blending operation will be made wherein 50% of the pixel were the color of the polygon and 50% were the color of the background. During the rendering operation in the *Stroyan* reference, there is this decision made as to whether the pixel is an edge pixel first, and then coverage is determined. This is illustrated in Figure 6 along the "Y" path. There is then provided information as to the direction of the sampling point to the edge which indicates the direction of blend. Therefore, during the later filtering operation, the blend can be effected with the use of this direction information and coverage information. If the pixel is determined not to be an edge pixel, then it would be written to the color of the polygon within which it resided and the coverage value was written to "full." This is indicated in Figure 6 with boxes 204, 206 and 208. However, the limiting aspect the *Stroyan* reference is that associated with a

AMENDMENT AND RESPONSE  
S/N 09/711,859  
Atty. Dkt. No. BBOY-25,415

later rendered polygon. If a larger background polygon is rendered that contains this first foreground polygon, an edge pixel that is determined to be outside of the first polygon will have the antialiasing information determined by blocks 210-216 in a prior rendering operation and this will pose a problem. The reason is that, in the rendering operation for the larger background polygon, this particular edge pixel for the first and foreground polygon will be determined to not be an edge pixel for that larger polygon and this pixel will be subject of the "NO" path from decision block 202 and this pixel will have the color thereof written as that of the lower larger polygon and the write coverage value in block 206 will be written to a full, i.e., the previous antialiasing information associated with the smaller polygon closer to the foreground will be over written. As such, there will be no retention of the antialiasing information of the edge pixel after rendering of the larger back polygon, for edge pixels that are determined to have their sampling point disposed outside of the first polygon, but which are still edge pixels associated with the first polygon. The reason for this is that the antialiasing information is only associated with the pixel and not with the polygon to which it extends. This is further indicated in Column 3, Lines 47- 54 wherein is noted that the purpose of the invention is to represent minority coverage of a pixel by an appropriate blending by a coverage percentage. This is associated with an edge pixel that is disposed outside of the polygon. Further, in Column 3, Lines 55-63, when a pixel is disposed outside of a polygon, i.e., less the 50% coverage, the color buffer is not modify, i.e., it is left to the color of the background and only the antialiasing blend information is modified. There is no association of this antialiasing information to the first polygon.

In Applicants' present inventive concept, as defined by the amended claims, the operation is such that there is a secondary Z-Value value. This secondary Z-value is described with reference to Figures 21, *et. seq.* By providing a secondary depth, that is the depth for the mask, a determination can be made as to whether the mask is to be overwritten even when outside of the edge. For example, when a red polygon is first rendered, this being the foreground polygon, an edge pixel outside of that red polygon will have its color set to that of the background, but will have an antialiasing mask with a secondary Z-Value that is different than the primary Z-Value. When a larger polygon that is behind the red polygon, for example, a blue polygon, is rendered, this pixel that was denoted as being an outside edge pixel for the red polygon will be initially written to the color of the blue polygon, but its mask will be left intact,

AMENDMENT AND RESPONSE

S/N 09/711,859

Atty. Dkt. No. BBOY-25,415

since this mask is associated with the red polygon. As such, if an edge pixel is determined to be within the polygon, the mask will be set such that it pushes color to a neighboring pixel. If, alternatively, an edge pixel is determined to be outside the mask, the outside of the triangle, then the triangle "pulls" color therefrom. The reason for this is that the mask is always associated with the foreground polygon and not with a polygon associated with the background color of that pixel. Without the retention of the antialiasing mask during all rendering operations, it is impossible for the antialiasing information for an edge pixel to travel the entire rendering operation and remain intact. There is no Z-ordering. This feature clearly is not disclosed or suggested in the *Stroyan* reference.

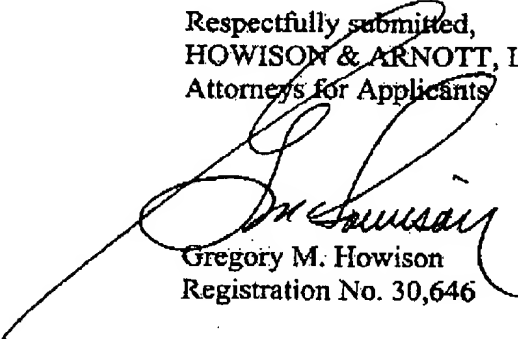
With respect to the claims, the independent claims have been amended to provide the feature that shows the antialiasing information is maintained through all rendering operations when the polygon with which the edge pixel is associated is maintained in the foreground. The *Stroyan* reference does not disclose nor suggest such a concept. In fact, it teaches the opposite, i.e., if, during the rendering operation, a later rendered polygon with a Z-Value indicating it is in the background is rendered, the edge pixel will have its antialiasing mask or buffer written over. Therefore, the *Stroyan* reference does not illustrate any way to handle the Z-ordering. In fact, it discloses that it will not handle this situation. As such, Applicants believe that the *Stroyan* does not anticipate or obviate any of the rejected claims, and therefore, Applicants respectfully request withdrawal of the 35 U.S.C. 102(a) rejection with respect to the rejected claims.

AMENDMENT AND RESPONSE  
S/N 09/711,859  
Atty. Dkt. No. BBOY-25,415

9

Applicants have now made an earnest attempt in order to place this case in condition for allowance. For the reasons stated above, Applicants respectfully request full allowance of the claims as amended. Please charge any additional fees or deficiencies in fees or credit any overpayment to Deposit Account No. 20-0780/BBOY-25,415 of HOWISON & ARNOTT, L.L.P.

Respectfully submitted,  
HOWISON & ARNOTT, L.L.P.  
Attorneys for Applicants



Gregory M. Howison  
Registration No. 30,646

GMH/yoc

P.O. Box 741715  
Dallas, Texas 75374-1715  
Tel: 972-479-0462  
Fax: 972-479-0464  
January 6, 2004

AMENDMENT AND RESPONSE  
S/N 09/711,859  
Atty. Dkt. No. BBOY-25,415